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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/820,129 | 04/08/2004 | Yosuke Kawakubo | 843.43760X00 | 8659 |

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EXAMINER

PATEL, HARI

ART UNIT PAPER NUMBER

2115

DATE MAILED: 01/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/820,129 | Applicant(s) KAWAKUBO, YOSUKE | |
| | Examiner Hari Patel | Art Unit 2115 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/24/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims are presented for examination.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 recites the limitation "a power source" in line 5. It is unclear if this power source refers to one of the said power sources disclosed in Claim 1, or if it refers to a third power source.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 7, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (U.S. Patent No. 5,359,569).

7. Fujita et al. teach a storage unit (*Fig. 1 – Semiconductor Memory, 1*) comprising:
a storage device (*Fig. 1 – Main Flash Memory, 2*) to store data;
a storage device control section (*Fig. 1 – Data Control Circuit, 4*) to control the data information handling to/from said storage device (*col. 3, lines 57-60*);

a channel control section (*Fig. 1 – Data Control Circuit, 4*) to control an interface with a host machine (*processing apparatus – col. 3, lines 45-57*)

a cache memory (*Fig. 1 – Write Cache Memory, 3*) to temporarily store data written/read between said host machine (*processing apparatus*) and said storage device (*main flash memory*);

a first power source (*Fig. 1 – Power Supply Circuit / Power Supply Unit, 7*) to supply, to said cache, a voltage in a normal operation mode in which data is written to/read from said cache (*col. 3, lines 42-44*); and

a second power source (*Fig. 1 – Battery, 6*) to supply, to said cache, a voltage in a backup operation mode in which the data stored in said cache memory is retained (*col. 4, lines 15-23*).

8. As per Claim 7, Fujita et al. teach the storage unit further comprising:

first connection means connected to an input side of said first power source (*Fig. 1 – Power Supply Unit / Power Source*),

wherein said first connection means is turned off when power is supplied from said second power source, a battery (*col. 4, lines 15-19*).

9. As per Claim 8, Fujita et al. teach the storage unit further comprising:

second connection means between an output terminal of said second power source and a feeding terminal of said cache memory (*Fig. 1 – Battery, 6 and Write Cache Memory, 3*); and

monitoring means to monitor the output voltage of said second power source (*switching operation – col. 4, lines 31-38*),

wherein said second connection means is turned off when power is supplied from said first power source (*col. 4, lines 26-30*) .

Fujita et al do not explicitly teach a monitoring of the output voltage of the second power source (*battery, 6*), however, in order for the switching operation to operate, the output voltage of the battery must, inherently, be monitored to determine when to switch feeding paths of both power sources to the cache, depending on which power source supplies a higher voltage.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2 – 6, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. as applied to Claim 1 above.

12. Fujita et al. teach the storage unit,

wherein each of the said first and second power sources includes:

a switching operation to connect the feeding paths of either, the first or second, power sources to the cache, connecting one of said feeding paths depending on which power source has a higher voltage output (*col. 4, lines 31-38*).

It would have been obvious to one of ordinary skill in the art to have a function to change its own output voltage in response a command.

13. As per Claims 3, 4, 5, 6, it would have been obvious to one of ordinary skill in the art to lower an output voltage of a power source when switching power source feeding paths.

14. As per Claim 9, it would have been obvious to one of ordinary skill in the art to use a fast-response and power efficient DC-DC converter for the power sources in the storage unit.

15. As per Claim 10, it would have been obvious to one of ordinary skill in the art that a plurality of storage devices are provided for an arrayed redundancy.

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Conclusion

16. Any inquiry concerning this communication from the examiner should be directed to Hari Patel whose telephone number is 571-272-2743. The examiner can normally be reached on Monday – Thursday from 8:00am – 5:30pm and every other Friday from 8:00am – 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee, can be reached at 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of the application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Hari Patel
Examiner
Art Unit 2115

